Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of producing a thin film using opposing electrodes, said method comprising the step of:

applying a pulse voltage on said opposing electrodes under a pressure of 100 to 1600 Torr in an atmosphere ~~comprising a gaseous raw material including~~ consisting of a carbon source gas and a dilution gas containing at least one group VIII element of the Periodic Table to generate discharge plasma so that a thin film, comprising diamond like carbon that is not a crystalline diamond like carbon having a Raman spectrum comprising a main peak at about a wave number of 1580 cm^{-1} and a shoulder peak in a wave number range of 1300 cm^{-1} to 1500 cm^{-1}, is formed on a substrate, wherein said pulse voltage is an impulse voltage and has a pulse duration shorter than 1000 nsec and said opposing electrodes are not covered with a solid dielectric material.

2. (Original) The method of claim 1, wherein said pulse voltage has a pulse rise time of 1000 nsec or shorter.

3. (Original) The method of claim 1, wherein said pulse voltage has a pulse fall time of 1000 nsec or shorter.

4. (Cancelled).

5. (Withdrawn) A thin film produced by the method of claim 1.

6. (Cancelled).

7. (Withdrawn) The thin film of claim 5 having a hardness of 10 GPa or higher.

8. (Currently Amended) A method of producing a thin film using opposing electrodes, said method comprising the step of:

applying a pulse voltage on said opposing electrodes under a pressure of 100 to 1600 Torr in an atmosphere ~~comprising a gaseous raw material including~~ consisting of a carbon source gas and dilution gas of at least one group VIII element of the Periodic Table to generate discharge plasma so that a thin film, comprising diamond like carbon that is not a crystalline diamond like carbon having a Raman spectrum comprising a main peak at about a wave number of 1580 cm^{-1} and a shoulder peak in a wave number range of 1300 cm^{-1} to 1500 cm^{-1}, is formed on a substrate, wherein said pulse voltage in an impulse voltage and has a pulse duration shorter than 500 nsec and said opposing electrodes are not covered with a solid dielectric material.

9. (Cancelled).

10. (New) The method of claim 1, wherein said substrate has a temperature of 20°C to 300°C.

11. (New) The method of claim 8, wherein said substrate has a temperature of 20°C to 300°C.

12. (New) The method of claim 8, wherein said pulse voltage has a pulse rise time of 1000 nsec or shorter.

13. (New) The method of claim 8, wherein said pulse voltage has a pulse fall time of 1000 nsec or shorter.